Contents of *Ecological Modelling*, Vol. 63

VOL. 63 NOS. 1–4 SEPTEMBER 1992

Special Issue
Ecosystem Theory
Edited by F. Müller, W. Windhorst and S.E. Jørgensen

Preface
O. Fränzle (Kiel, Germany) vii
Introduction
S.E. Jørgensen (Copenhagen, Denmark), F. Müller and W. Windhorst (Kiel, Germany) xi

Ecosystem Properties

Aims and limits of ecological modelling exemplified by island theory
C. Wissel (Marburg, Germany) 1
Uniqueness of ecosystems versus generalizability and predictability in ecology
B. Breckling (Giessen, Germany) 13
Modelling the mosaic cycle of a Middle European beech forest
C. Wissel (Marburg, Germany) 29

Modelling Approaches

Problems of modelling and forecasting on the basis of phenomenological investigations
K.-F. Albrecht (Berlin, Germany; Moscow, Russia) 45
Stochastic population models and their relevance for the conservation of species
G. Jetschke (Jena, Germany) 71
Strategies for structural-dynamic modelling
S.N. Nielsen (Roskilde, Denmark) 91
Fuzzy knowledge-based models in ecological research
A. Salski (Kiel, Germany) 103
Semantics and syntax elements of a unique calculus for modelling of complex ecological systems
V. Wenzel (Berlin, Germany) 113

Terminology

Remarks on terminology and the description of ecological systems
K. Jax, G.-P. Zauke and E. Vareschi (Oldenburg, Germany) 133
On the application of stability concepts in ecology
V. Grimm, E. Schmidt and C. Wissel (Marburg, Germany) 143

Ecosystem Theory

Forest ecosystem theory based on material balance
B. Ulrich (Göttingen, Germany) 163
Exergy and ecology
S.E. Jørgensen (Copenhagen, Denmark) 185
Hierarchical approaches to ecosystem theory
F. Müller (Kiel, Germany) 215
Are one-dimensional maps of any use in ecology?
M. Markus (Dortmund, Germany) 243
Real-structure process description as the basis of understanding ecosystems and their development
H. Bossel (Kassel, Germany) 261
Identifying ecosystem properties: a case study using plankton biomass size distributions
U. Gaedke (Konstanz, Germany) 277
Approaches for the restoration of forest ecosystems in northeastern Bavaria
R. Lenz and W. Haber (Freising, Germany) 299
Statistical mechanics of terrestrial ecosystems (Short Communication)
J. Messer (Göttingen, München, Germany) 319

Conclusions

Recent problems in ecosystem theory – conclusions of the workshop
F. Müller, W. Windhorst (Kiel, Germany) and S.E. Jørgensen (Copenhagen, Denmark) 325

Author Index 333